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present case the identification of the Mt. Desert plant as the original source of Warnstorf's type is strongly confirmed by the presence, intermingled with both specimens, of the same hepatic, which has been determined by Prof. Evans as *Lophozia inflata* (Huds.) M. A. Howe. It may be mentioned in passing, although it must be admitted that in view of the small number of botanists who collect hepatics it is at least a doubtful argument in favor of Mt. Desert as the type locality of *Sphagnum Faxonii*, that *Lophozia inflata* has never been reported from Massachusetts.

As a check upon the accuracy of the data accompanying the specimens at the Harvard Cryptogamic Herbarium, Mr. Rand's Mt. Desert herbarium was examined, and, as expected, still more of the characteristic material of *Sphagnum Faxonii* was found, again intermingled with *Lophozia inflata*. Mr. Rand's herbarium afforded, also, two additional stations for the plant on or near Mt. Desert,—Great Marsh Heath, Sea Wall and Great Cranberry Isle. In two cases the labels gave the habitat as "shallow pools." The local use of the word "Heath" on Mt. Desert is explained in the introduction to Rand and Redfield's "Flora of Mt. Desert Island, Maine." Here will also be found citation of all the specimens now referred to *Sphagnum Faxonii*, catalogued under vars. *plumulosum*, *submersum* and *falcatum* of *Sphagnum cuspidatum*.

To determine the relationship of *Sphagnum Faxonii* with other members of the *Cuspidata*, which occur in the same region, should prove an interesting problem to the bryologists of the Josselyn Botanical Society during their annual meeting at Mt. Desert in August.

Cambridge, Mass.

LICHEN NOTES NO. 12.

The Cladonia Specimens of "Lichenes Boreali-Americani."

G. K. Merrill.

An attempt is here made to assign to the Cladonia specimens of Miss Cummings' "Lichenes Boreali-Americani," their nomenclatural equivalents as recognized by Wainio in his Monographia Cladoniarum, Part III. The same inquiry is extended to those examples of the "North American Lichens" series in my possession. The greater part of the Cladonia material published in the two series is satisfactorily determined where one accepts Tuckerman as a guide, but the thought of the elder Fries whom Tuckerman follows in his disposition of the Cladonias has long been out of fashion with the European Lichenographers, and the tendency has been to make the genus more recondite than simple. One hears now and then that Wainio's Monograph is burdened with too much knowledge. The diligent and exhaustive inquirer seldom offers this criticism however, but welcomes information and puts up with the hardships of obtaining it. If it be desirable to know anything at all of the subject, it is equally so to know as much as possible, and it would certainly be no disadvantage to American Lichenology to have our Cladonia forms interpreted in the Wainian point of view, even as in the fragment here offered. Criticism or revision of published exsiccatae is attended with some risk, for it is well known that exsiccati frequently furnish variable exhibits under the same number or name. There is every reason to believe that diversity of this sort may be found in both the Cummings' series, indeed it could scarcely be otherwise, determined as they were on Tuckerman's phytographical conceptions. I am able to state however, from having in my possession many of what may be called the type examples of the various Cladonia numbers, such being the material made use of by Miss Cummings and Mr. Williams in their examinations for and discussions of identifications, that there is marked agreement with the material published.

CLADONIA RANGIFERINA (L.) Hoffm. No. 62 L. B. A., and No. 30 N. A. L. both from Wellesley, Mass =*Cladondia rangiferina* (L.) Web. Wainio Mon. Pt. III p. 222. The specimens characteristic, K+

CLADONIA RANGIFERINA b. SYLVATICA L. No. 63 L. B. A. Vineland, N. J., and No. 31 N. A. L. Wellesley, Mass.=*Cladonia sylvatica* (L.) Rabenh. f. *laxiuscula* Del. Wainio l. c. p. 222. K—

CLADONIA RANGIFERINA c. ALPESTRIS L. No. 64 L. B. A. Wellesley, Mass.= *Cladonia alpestris* (L.) Rabenh. Wainio Mon. Pt. I. p. 41. It is impossible for me to associate *C. alpestris* of common occurrence with any one of the modifications indicated for the species in Pt. III of the Monograph p. 223. K—

CLADONIA PAPILLARIA (Ehrh.) Hoffm. No. 59 L. B. A. Chester, S. C.=*Cladonia papillaria* (Ehrh.) Hoffm. m. *papillosa* Fr. Wainio Mon. Pt. III. p. 224. Another specimen under the same number is equivalent to f. *stipata* Flk. Clad. Comm. p. 6. K+ yellowish.

CLADONIA PAPILLARIA b. MOLARIFORMIS Hoffm. No. 247 L. B. A. Rock Creek, D. C.=*Cladonia papillaria* m. *molariformis* (Hoffm.) Schaer. Wainio l. c. p. 224.

CLADONIA DIGITATA (L.) Hoffm. No. 142 N. A. L. St. Francis, Me.=*Cladonia digitata* Schaer, f. *monstrosa* (Ach.) Wain. Wainio l. c. p. 228. The reaction is K +

CLADONIA CORNUCOPIOIDES (L.) Fr. No. 245 L. B. A. Mt. Moosilauke, Franconia Mts., N. H.=*Cladonia coccifera* (L.) Willd. v. *stemmatina* Ach. Wainio l. c. p. 228. K+ faint yellow.

CLADONIA CORNUCOPIOIDES b. PLEUROTA Schaer. No. 306 N. A. L. "characterized by very long podetia," same locality as the foregoing, in my copy consists in part of *Cladonia coccifera stemmatina* and (the plants with "long podetia") *C. deformis extensa.* Variation *pleurota* (Flk.) Schaer. of *C. coccifera* is sorediate, not verruculose.

CLADONIA DEFORMIS Hoffm. No. 141 N. A. L St. Francis, Me.=*Cladonia deformis* Hoffm. m. *extensa* (Hoffm.) Wain. Wainio l. c p. 231. K+ faint yellow.

CLADONIA CRISTATELLA Tuck, No. 67 L. B. A. Wellesley, Mass. = *Cladonia cristatella* f. *Beauvoisii* (Del.) Wain. Wainio l. c. p. 231. K—

CLADONIA LEPORINA Fr. No. 144 L. B. A. Auburn, Ala., is one of the few species remaining unmolested by lichenological reviewers.

CLADONIA UNCIALIS (L.) Web. No. 271 L. B. A. Mt. Moosilauke, N. H.= *Cladonia uncialis* f. *biuncialis* (Hoffm.) Harmand in Cat. Lich. Lorraine, p. 116. The perplexities of *C. uncialis* are in no degree cleared up by Wainio's subdivisions. In his Schema Mon. Pt. III, he ignores *C. uncialis adunca*, a long recognized form of the species, and it, with the plant illustrated by No. 271, is absolutely without place or name. Form *biuncialis* is representative of a maximum of development for the plant commonly recognized in this country as typical *C. uncialis*, and the name in the writer's estimation may best stand as a convenient designation for indicating extent of development, in the same way that *major*, *extensa*, *valida*, *grandis*, etc., find a use in other Cladonia species. For the less developed exhibits of that *uncialis* type to which f. *biuncialis* is referable, the designation *humilior* Fr. may well be employed. Wainio states that *Lichen uncialis* L. is equivalent to *C. uncialis* Fr. This would be the var. a. Fries Li. Eur. Ref. and it comprehends v. *adunca* Ach., *biuncialis* Hoffm. and all the minor conditions of the two. Variety b. *humilior* Fr. is now known to be one of these minor states with affinity to *biuncialis*. It thus appears that no one of the sub-forms of *C. uncialis* may be definitely established as a historical type for the species. K—

CLADONIA UNCIALIS (L.) Fr. No. 181 L. B. A. Brewster, Mass.=*C. uncialis* (L.) Web. f. *obtusata* Ach. Wainio Mon. Pt. III. p. 233. The specimen is by no means well characterized but has the dilated summits of the form.

CLADONIA BORYI Tuck. No. 65 L. B. A. Annisquam, Mass. = *C. reticulata* (Russell) Wain. f. *reticulata* (Bor.) Wain. Wainio Pt. III. p. 234. Tuckerman's name should be preserved for this plant for he was first to maintain its specific identity. No. 65 is not var. b. *lacunosa* Bory of Tuckerman's 1848 Synopsis, hence not form *lacunosa* (Bor.) Wain. of the Monograph. Rendering justice to all parties the name for the plant represented by No. 65 should stand as **C. Boryi** Tuck. f. **reticulata** (Russell) Merrill. comb. nov. K—

CLADONIA DELICATA (Ehrh.) Flk. No. 192 L. B. A. Rock Creek Park, D. C.= *C. delicata* (Ehrh.) Flk. f. *quercina* (Pers.) Wain. Wainio l. c. p. 238.

CLADONIA FURCATA (Huds) Fr. v. *racemosa* (Hoffm.) Flk. No. 243 N. A. L. North Woodstock, N. H.=*C. furcata* (Huds.) Schrad. v. *racemosa* (Hoffm.) Flk. f. *corymbosa* (Ach.) Nyl. Wainio l. c. p. 239. While No. 243 is satisfactorily *racemosa* Flk. there is considerable doubt regarding its referableness to *racemosa* Hoffm. Wainio unites under his v. *racemosa corymbosa* all the fertile and some of the unfertile *furcata* modifications of Floerke and later authors. The f. *corymbosa* of Nylander's recognition comprehends the stout rigid moderately fissured copiously fruited *furcata* that Floerke makes a sub-variety of his v. *fissa* under the name of *arbuscula*. No. 243 is not form *corymbosa* in any except Wainio's sense. It is not Floerke's v. *fissa* nor its sub-variety *racemosella*, and it is best disposed of under *racemosa* Flk. K—

CLADONIA SQUAMOSA Hoffm. No. 60a L. B. A. North Woodstock, N. H. and No. 60b L. B. A. Norton, Va.=*C. squamosa* (Scop.) Hoffm. f. *denticollis* (Hoffm.) Flk. Wainio l. c. p. 242. Most of the innumerable *squamosa* subdivisions of recent European proposal are as yet undetected in this country. To a great extent this is due to the indifference of our investigators rather than lack of material. K—

CLADONIA TURGIDA (Ehrh.) Hoffm. No. 182 L. B. A. North Woodstock. N. H. =*C. turgida* (Ehrh.) Hoffm. m. *stricta* Nyl. Wainio l. c. p. 245. K— or faint +

CLADONIA MITRULA Tuck. No. 56 L. B. A. Wellesley, Mass., and No. 187 of the same series Chevy Chase, Md.=*C. mitrula* Tuck. f. *imbricatula* Nyl. Wainio l. c. p. 247. K—

CLADONIA SYMPHYCARPA Fr. No. 178 L. B. A. Takoma Park, Md.=*C. subcariosa* (Nyl.) Wain. f. *evoluta* Wain. Wainio l. c. p. 247. K+ at length crimson.

CLADONIA CARIOSA (Ach.) Spreng. No. 57 L. B. A. St. Francis, Me.=*C. cariosa* (Ach.) Spreng. f. *cribosa* (Wallr.) Wain. Wainio l. c. p. 248. In my copy only one podetia characteristic of the form. No. 28 N. A. L. Wellesley, Mass., marked by Miss Cummings as *C. cariosa* is with difficulty referable to the species. The primary thallus is not unlike that of *C. cariosa*, and the reaction is similar, but the whole habit of the podetia is much like that of *C. strepsilis* f. *glabrata* Wain. only larger. It is interesting to note here, that *C. strepsilis* has by many authors been referred to *C. cariosa*. No. 28 is distinctly atypical and irreconcilable with any described *C. cariosa* form in my copy, whatever a study of the the other material distributed under that number may demonstrate. K+

CLADONIA GRACILIS (L.) Willd.) v. *chordalis* (Flk.) Schaer. No. 272 L. B. A. and No. 140 N. A. L. Mt. Moosilauke, N. H.=*C. amaurocraea* (Flk.) Schaer.) *celotea* Ach. Wainio l. c. p. 232. The burden of error in this determination must in part rest with the late Mr. T. A. Williams. The original specimen submitted to Mr. Williams by Miss Cummings, now in my herbarium, is indorsed in the handwriting of the former, "*C. gracils* v. *elongata* Fr. cups almost obsolete." It seems very odd that Miss Cummings should have accepted this view, for in her early New England Lichen series the same plant was issued as *C. amaurocraea*. K—

CLADONIA GRACILIS (L.) Nyl. a. *verticillata* Fr. No. 162 L. B. A. Takoma Park, Md.=*C. verticillata* Hoffm. v. *evoluta* Th. Fr. Wainio l. c. p. 258. K—

CLADONIA PYXIDATA (L.) Fr. No. 58 L. B. A. Allaguash Plantation, Me.=*C. pyxidata* (L.) Fr. v. *neglecta* (Flk.) Mass. Wainio l. c. p. 252. The apothecia in my copy rather pale, and the podetia less verrucose than in typical v. *neglecta*, but the interior of the scyphi are strongly verrucose-corticate. K—

Cladonia fimbriata (L.) v. *radiata* (Schreb.) Coem. No. 345 N. A. L. Lake Wellington, Colo.=*C. fimbriata* (L.) Fr. f. *cornutoradiata* Coem. sub-forma *radiata* (Schreb.) Coem. Wainio l. c. p. 253, and is entirely characteristic.

Cladonia fimbriata (L.) Fr. v. *coniocraea* (Flk.) Wain. No. 268 L. B. A. Lake Wellington, Colo. In my copy the podetia are whitish and farinose sorediate throughout and not corticated basally, hence do not belong with *C. ochrochlora* Flk. of which the habit of the podetia in its v. *cerotodes* Flk. resembles that of our specimen. No. 268 on the evidence of its characters as presented in my copy, seems to be a plant uniting the features of sub-forma *subulata* (L.) Wain. with those of sub-forma *fibula* Ach. Wainio l. c. p. 253. Rockland, Maine.

OFFERINGS.

(To Society Members only. For postage.)

Mr. W. W. Calkins, Berwyn, Cook Co. Illinois. *Anomodon attenuatus* (Schreb.) Huebn.: *Sphagnum compactum* and *S. acutifolium* var. *Schimperi*. All collected Cook Co.

Dr. A. F. K. Krout, Glenolden, Delaware Co. Pa. *Jungermannia exeisa* Dicks.; *Reboulia hemispherica* Raddi. Collected near Philadelphia.

Mr. D, Lewis Dutton, R. F. D., 2 Brandon, Vermont. *Sphagnum Girgensohnu* Russ.; *S. Girgensohnu* var. *coryphaeum* Russ. Collected Vermont.

Mr. N. L. T. Nelson, 4509 a Cote Brilliante Ave., St. Louis, Mo. *Cylindrothecium seductrix* Sulliv. cfr. Collected Missouri. *Climacium Americanum* Brid. cfr. Collected Colorado.

Mr. C. C. Plitt, 3933 Lowndes Ave., Baltimore, Maryland. *Leucobryum glaucum*. See article in this number.

Miss Gertrude Streator, Clark Hall, University Station, Seattle, Wash. *Tayloria serrata* B. & S. Collected Menlo Park near Steilacoon, Wash.; *Rhacomitrum canescens* var. *ericoides* B. & S. st.

Mr. George M. Pendleton, Sisson, California. *Mnium medium* B. & S.

Miss Alice C. Kendall, Holden, Mass. *Mnium cinclidioides* (Blytt.) Huebn. Collected Holden.

Mr. Edward B. Chamberlain, Cumberland Center, Maine. *Brachythecium rivulare* B. & S. cfr.; *Bryum Lapponicum* Kaur. cfr. Both collected by Dr. V. F. Brotherus, in Finland.

Miss C. C. Haynes, Highlands, New Jersey. *Anthelia rivalis* Sw. (=*Anthelia Juratzkana* Limpr.) Trevis; *Lophozia politus* Nees. Collected, Dr. V. F. Brotherus, in Lapland.

Dr. George H. Conklin, 1204 Tower Avenue, Superior, Wisconsin. *Scapania irrigua* (Nees) Dumort; *Lophozia Lyoni* (Tayl.) Steph.; *Lophozia barbula* (Schliech.) Evans. Collected Superior, Wis.